



Jobs and Tasks in Rural Water Management

JAL KAUSHAL: WATER, LIVES, AND LIVELIHOODS

Nidhi Batra and Apoorva Dhingra



Jobs and Tasks in Rural Water Management

JAL KAUSHAL: WATER, LIVES, AND LIVELIHOODS

Nidhi Batra and Apoorva Dhingra

Published in August 2023 by JustJobs Network Inc.

Acknowledgement:

This report was produced as part of Jal Kaushal, a research project funded by Arghyam. Arghyam is a charitable foundation based in Bengaluru, Karnataka, working to build water security at scale. The authors wish to express their deepest gratitude to Sabina Dewan, Manu Srivastava, and Gurudutt Ramachandra for their guidance; to Shreya Ramnath and Neha Margosa for copyediting; and Minus Equals Plus and Venkatesh Bilvam for designing this report.

Cover image: A water storage tank and supply system

Contents

Abbreviations

Executive Summary

Chapter 1: The Jobs-Tasks-Skills Nexus of Water Management 4

Chapter 2: Conceptual Outline for a Water Workforce 5

Chapter 3: Mapping the Rural Water Workforce 9

Chapter 4: Reflections 19

References

Abbreviations

ABY	Atal Bhujal Yojana
ACTs	Arid Communities and Technologies
BPL	Below Poverty Line
CSOs	Civil Society Organisations
DIP	District Implementation Partner
GIS	Geographic Information System
GP	Gram Panchayat
IEC	Information, Education, and Communication
IWRM	Integrated Water Resource Management
JJM	Jal Jeevan Mission
JJN	JustJobs Network
M&E	Monitoring and Evaluation
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NGOs	Non-Governmental Organisations
O&M	Operations and Maintenance
PDO	Panchayat Development Officer
SC	Scheduled Caste
SMCs	School Management Committees
ST	Scheduled Tribe
VWSC	Village Water and Sanitation Committee
WUC	Water User Committee

Executive Summary

In India, the world's largest user of groundwater, several government and civil society interventions promote water management with the goal of making India's villages water-secure.¹ Most interventions, whether initiated by state and central governments or by civil society, are decentralised and emphasise the role of community members in managing and implementing them.² They build on the understanding that water is central to the health and livelihood of rural economies and is needed to create and maintain jobs across sectors.³ Integrated water management, which includes managing source, infrastructure, and services, is both a job creator as well as a job enabler.

Despite the understanding that water and water management are job creators and enablers, there is little record of community members or frontline workers' tasks, responsibilities, training, skills, remuneration, and working conditions. This is made challenging by the fact that water management work at local level is often part-time, voluntary, or unpaid. So, while there is consensus that community members perform critical water management tasks, a knowledge gap persists about their work and working conditions.

To address this, JustJobs Network (JJN) and Arghyam launched Jal Kaushal, a project that examines the jobs-tasks-skills nexus of rural water management. The study hypothesises that by investigating and understanding livelihoods engendered by the sector, water management can become a more sustainable and successful practice.

This report offers an introduction to water commons and water management in rural India. By focusing on existing water management initiatives of central and state governments, civil society, and non-government organisations, this report attempts to highlight the critical role played by frontline workers in rural water management.

The tasks and jobs generated by water management have rarely been tracked, despite significant global activity in this sector. This report studies central-level schemes and missions, as well as CSO and NGO interventions, to parse out jobs and tasks necessitated and created by the rural water management sector. The preliminary maps offer directions for granular research to understand the jobs created, tasks required, and skills needed to manage rural water commons in India.

Chapter 1: The Jobs-Tasks-Skills Nexus of Water Management

Water management underlies nearly all development challenges from poverty alleviation and food security to gender equity. With an impact across health, education, and livelihoods, water management is critical for sustainable socio-economic development, especially for a soon-to-be water-stressed country like India. With over 50 percent of households still without household tap connections across 6 lakh villages, managing water is especially critical in rural India.⁴ This practice includes managing water infrastructure such as pipelines and canals, managing water sources such as ponds, lakes, and aquifers, and managing water services such as distribution systems.

Successful water management initiatives over the years indicate that the participation of local communities is key to managing India's water.⁵ This participation manifests in the form of skilled workers in the community who are able to understand groundwater and surface water, those who are able to plan water usage based on availability, and those who can operate and maintain structures and systems to ensure water security. With rural unemployment estimated at 7.18 percent as of April 2022, water management is a sector worth examining to gauge opportunities for work.⁶ It is in acknowledging this urgency of rural water management and livelihood opportunity creation that JustJobs Network-led and Arghyam-funded Jal Kaushal Project investigates linkages between jobs, skills, tasks, and rural water management.

The tasks and jobs generated by water management have rarely been tracked but a growing body of research points to significant activity in this sector globally.⁷ As a result of government, CSO and NGO intervention, the water management sector is growing in India too. Building on the overview offered by JustJobs Network's (JNN) report *Landscape of Rural Water Management*, this report studies central-level schemes and missions as well as CSO and NGO interventions to parse out jobs and tasks necessitated and created by them in the rural water management sector. In line with JNN's researchers' intentions to investigate links between rural water management and livelihood-making, these preliminary maps offer a direction to conduct granular research to understand the jobs created, tasks required, and skills needed to manage rural water commons in India.

Chapter 2: Conceptual Outline for a Water Workforce

The universe of water management in India is complex, with jobs and tasks divided across administrative units, technical disciplines, and the nature of intervention. This chapter offers a methodology for mapping existing jobs and tasks in the rural water management sector and by building on existing knowledge, offers a conceptual outline to map the rural water cadre in India. This outline, developed by JIN researchers, is informed by secondary research, and will be modified, if needed, through primary research.

Defining Jobs and Work

Jobs are an individual's set of tasks that will deliver the work within a single enterprise, farm, community, household, or other production unit, including self-employment.⁸ Jobs can be formal or informal. A formal job refers to a job that is, in law and in practice, subject to national labour legislation, income taxation, social protection or entitlement to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, etc.). Conversely, an informal job refers to a job that is, in law or in practice, not subject to any of the above benefits.⁹

Work is any activity performed by any person to produce goods or to provide services for use by that person or others, irrespective of its formality or legality.¹⁰ Work can be divided into two broad categories: paid and unpaid. Paid work describes work performed for others in exchange for pay or

profit, whereas unpaid work refers to the production work for the person's own use, unpaid trainee work, volunteer work, unpaid work by prisoners, and unpaid military or alternative civilian service.¹¹

For this study, we will document and observe the following attributes of jobs, tasks, and work in water management:

- **Formality and informality**
- **Paid and unpaid work**
- **Days of work (full time/ part time/ number of days)**
- **Gender of workers**
- **Role of technology**
- **Traditional jobs**

Understanding Water Work – A Conceptual Outline

To begin building a job and tasks map of rural water management, JIN researchers developed three categories of jobs and tasks, namely technical water jobs, supporting jobs, and institutional or administrative jobs.

Technical water jobs are direct water jobs that mainly consist of a) water resources management, including Integrated Water Resource Management (IWRM) and ecosystem restoration and remediation; b) building and managing water infrastructure; and c) provision of water-related services.¹²



A restored traditional water tank in a temple complex in Kalaburagi, Karnataka.

Supporting jobs are non-technical but offer necessary support for technical water works to take place. This includes, for example, communications and behaviour-change work, financial planning, and monitoring and evaluation.

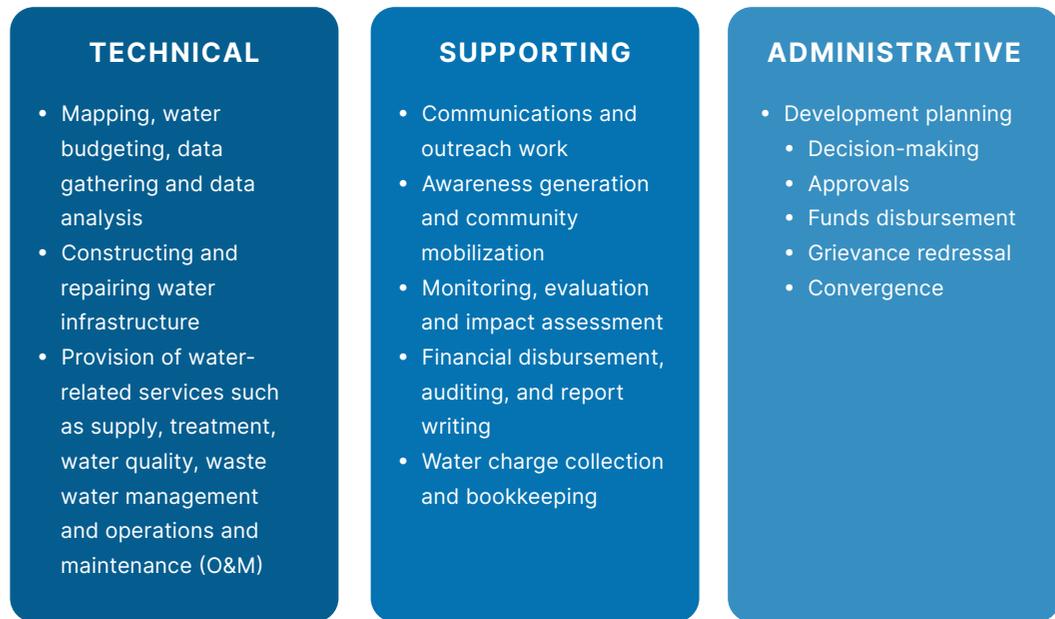
Finally, administrative jobs exist at the village, block, district, state, and central levels and are largely supervisory roles where workers are not skilled or trained for water management works specifically and handle diverse administrative responsibilities. For example, a Panchayat Development Officer (PDO) supervises and monitors the Gram Panchayat (GP)

and is also responsible for paying the salaries of some technical workers.

Informed by both demand- and supply-side interventions, JJN researchers have created a conceptual outline to map the tasks and jobs created within the water management sector in India. This outline divides tasks and jobs into the aforementioned types: technical jobs, supporting jobs, and administrative jobs. In addition, the outline records the characteristics/attributes of jobs, including whether they are formal or informal, paid or unpaid, traditional or non-traditional, if they use

Figure 1

Categories of jobs in the water management sector



A water tank and supply system, Karnataka.

Figure 2

Conceptual outline for mapping water cadre

	#	Types of Jobs	Nature of the Job	Remuneration	Number of Workdays	Use of Technology	
Village	1	Technical Water Jobs					→
Block							
District	2	Supporting Jobs					→
State							
Centre	3	Administrative Jobs					→

Map to required skills

Reflect on how training, skilling, and capacity building needs are met

technology, and the number of days they require a person to work. Additionally, these jobs and tasks are also separated across levels such as the village, block, district, state, and centre. Figure 2 provides an overview of the types of jobs and tasks associated with different levels of administrative units in India

These jobs and tasks are generated through both supply- and demand-side interventions. Supply-side interventions in water management aim to increase the amount of available water by finding new sources, increasing storage capacities, diverting water, and using technology among others.¹³ This type of intervention typically does not burden the user to change their use and behaviour towards water and is the “responsibility” of the government, largely directed towards ensuring the “supply” of water rather than looking at management practices

to increase water security of the village. Demand-side interventions, on the other hand, focus on reducing the amount of water being used by people for a variety of purposes such as domestic, agriculture, or for municipal or industrial needs. These interventions can include operational and maintenance changes, such as fixing or upgrading infrastructure to minimise wastewater, economic approaches such as offering incentives to reduce or reuse water, and public education that changes behaviours through knowledge sharing.¹⁴ These are largely bottom-up interventions from the community that look at integrated water management, rather than simply providing water services, and are also informed by the geomorphological, socio-economic, and cultural context of the settlement.

Chapter 3: Mapping Rural Water Cadre

Supply-side Mapping

Supply-side jobs and tasks are generated through the initiatives of a service provider, in this case the government, and are largely top-down in nature. These are mapped across two levels:

- a) Panchayati Raj System
- b) Central Schemes

Rural Water Cadre – Panchayati Raj

From the central government to villages, each administrative unit in India performs distinct functions in the water management sector. Figure 3, included below, details the administrative structure of the country as well as each level's role in managing water.

Figure 3
Water management tasks across administrative units

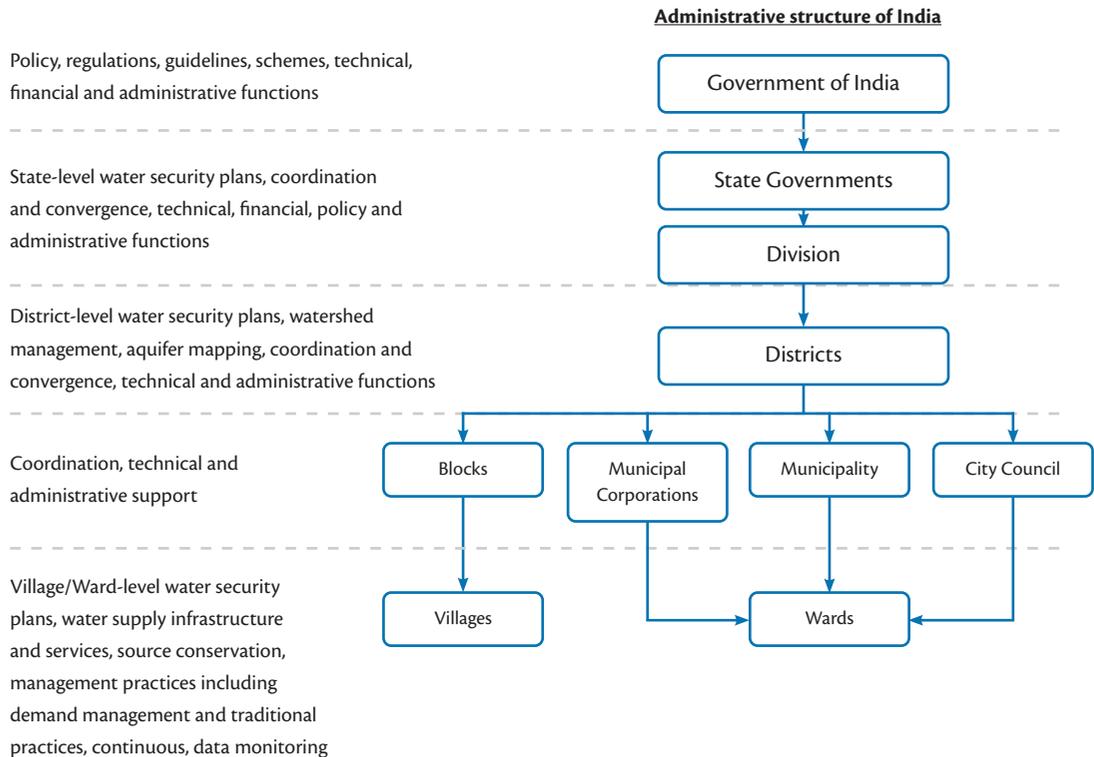


Table 1

Village-level 'tasks' performed by governing institutions and individuals

Roles of Village-Level Institutions and Individuals in Managing Water				
Tasks	Gram Sabha	Gram Panchayat	VWSC	Operator/ Handpump Caretakers
Meetings and Organisation	<ul style="list-style-type: none"> • Hold meetings for decisions at key stages • Nominate and constitute VWSC 	<ul style="list-style-type: none"> • Meet as required by law/rules • Appoint the VWSC 	<ul style="list-style-type: none"> • Meet once a month • Attend Gram Sabha/GP meetings 	Attend GP/VWSC and Gram Sabha meetings
Planning	<ul style="list-style-type: none"> • Discuss and decide on sustainability issues like choice of water sources and kind of water supply scheme • Discuss and decide on plans and budgets • Decide the level of contribution by households, connection charges, subsidy for SCs, STs, and BPL households 	<ul style="list-style-type: none"> • Approve investment plans (physical and financial) • Apply for financing, training, and technical assistance • Present annual budgets in the Gram Sabha • Approve user fee charges after discussion in the Gram Sabha 	<ul style="list-style-type: none"> • Prepare/update plans (water source plan, water safety plan, operating plan, service improvement plan) • Collect household contributions • Prepare annual budgets • Prepare recommendations for user fee charges • Organise people to not waste water and keep it clean 	<ul style="list-style-type: none"> • Plan day to day tasks • Support the VWSC to prepare/update plans
Implementation		<ul style="list-style-type: none"> • Approve works 	<ul style="list-style-type: none"> • Hire and supervise contractors • Procure goods, keep and audit accounts 	
Operation and Maintenance	Discuss and decide on user fees as required for O&M and subsidy for SCs, STs, and BPL households	Approve water user charges after discussion in the Gram Sabha	<ul style="list-style-type: none"> • Buy spare parts • Hire trained mechanics for handpump preventative maintenance • Hire specialist support for the operator • Connections and disconnections • Daily financial management • Authorising expenditure • Payments 	<ul style="list-style-type: none"> • Day to day operation and maintenance • Billing and collection • Customer services • Material inventory and stock register • Water safety by chlorination or alternative treatment • Water quality monitoring
Monitoring, Audit and Reporting	Social audit of expenditure	<ul style="list-style-type: none"> • Half yearly review of accounts • Half yearly review of budgets • Annual reports to Block on implementation progress and operational performance 	<ul style="list-style-type: none"> • Monthly review of accounts • Bookkeeping • Quarterly reports to Gram Sabha/GP on implementation progress and operational performance 	<ul style="list-style-type: none"> • Weekly review of sources and systems • Weekly review of cash collection and expenses • Weekly report to VWSC on operational performance • Records and logbook maintenance

Source: Ministry of Rural Development, Government of India

At the village level, water commons are managed through the Panchayati Raj system and backed by the 73rd amendment. On an institutional level, this translates to the Gram Sabha, Gram Panchayat, and Village Water and Sanitation Committees (VWSC) and local-level institutions like School Management Committee (SMC) and Water User Committee (WUC) overseeing and guiding water management. On an individual level, roles such as pump operators or pump caretakers exist to handle operation and maintenance responsibilities for water infrastructure

in the village. Table 1 details commonly observed village-level institutional and individual roles.

While the tasks of some institutions and individuals are mapped and recorded, as illustrated in Table 1, the rural water management sector lacks a streamlined and holistic mapping of jobs and tasks on a national and state level. This mapping is also complicated by the fact that interventions in the rural water management sector are differentiated into supply-side and demand-side interventions.



JN researchers interviewing the pump operator and the bill collector at a village in Kalaburagi, Karnataka.

Rural Water Workforce – Central Schemes

Given that the Jal Jeevan Mission (JJM) and Atal Bhujal Yojana (ABhY) are the largest water supply and management missions operating across the country, JJN researchers conducted a preliminary mapping of jobs and tasks using these missions as touchstones. Since the guidelines are only suggestive and states have flexibility in implementation, jobs and tasks vary across states. These roles are anchored in various relevant departments at state and district level such as the Rural Drinking Water and Sanitation Department, Ground Water Department, and Panchayati Raj Department amongst others. Additionally, there are roles either created or supported by CSOs and NGOs that may or may not intersect with the roles created by JJM and ABhY. As a result, the following jobs and tasks maps are only illustrative and not definitive. A definitive and authoritative map will emerge from a combination of primary and secondary research.

For instance, ABhY is expected to nurture Bhujal Jankars (para-hydrogeologists) across GPs in the country on the science of groundwater and ways to ensure local water security.¹⁵ Parallely, JJM articulates a need for a water cadre with knowledge of sanitation, greywater management, as well as groundwater, to prepare village action plans.¹⁶ CSOs and NGOs told JJN researchers that JJM is also training masons, electricians, and plumbers to install and maintain pipeline infrastructure and some states plan to rehire them in other programmes by maintaining their details in a database.¹⁷ Tables 2-4 below include jobs and roles mapped across village, district, and state levels. Informed by central-level schemes and missions, these offer an overview of government-mandated jobs and roles in water management.

Village Level

Table 2

Jobs and tasks at the Village and Gram Panchayat level

S No	Jobs/Role	Tasks	Type of Job	Nature of Job	Remuneration
1	Water Quality Surveillance	<ul style="list-style-type: none"> Test water samples for contamination by using Field Test Kits 	Technical	Informal	Incentive and voluntary
2	Barefoot Technicians	<ul style="list-style-type: none"> Minimal repair works 	Technical	Informal	
3	Pump Operators	<ul style="list-style-type: none"> Turn pumps on and off to supply water to the village Minimal repair and maintenance works 	Technical	Formal	Paid
4	Plumber, electrician, and motor mechanic	<ul style="list-style-type: none"> Provide plumbing, electrical, and mechanical support respectively 	Technical	Formal	Paid
5	Water Entrepreneurs	<ul style="list-style-type: none"> Operations and management 	Technical	Formal	Contractual
6	Bhujal Jankars	<ul style="list-style-type: none"> Collect groundwater level data, rainfall, and water quality in their GPs Engage in water resources survey, site level supervision work, and monitoring wells and aquifers Disseminate information among the community to enable them to take informed decisions in activities, for example farming that involves groundwater use Trained by NGOs/CSOs 	Technical and Supporting	Informal	Paid
7	Volunteers (ABHY)	<ul style="list-style-type: none"> GP volunteers trained by DIPs Collect data using equipment provided by State Programme Management Units 			
8	Construction workers (watershed related work)	<ul style="list-style-type: none"> Contour trenches Contour bunds Boulder checks Far bunding Gabion checks Underground dykes Earthen dam Dugout farm ponds 	Technical		MGNREGA wages
9	Construction workers (irrigation related work)	<ul style="list-style-type: none"> Rehabilitation channels of minor, sub-minor, and field Irrigation open wells Check dams 	Technical		MGNREGA wages
10	Construction workers (flood management related work)	<ul style="list-style-type: none"> Chaur renovation Community water harvesting ponds 	Technical		MGNREGA wages
11	Construction workers (rural drinking water related work)	<ul style="list-style-type: none"> Soak pits Recharge pits 	Technical		MGNREGA wages
12	Panchayat Development Officer	<ul style="list-style-type: none"> Supervise and monitor the functions of the GP Oversee implementation of MGNREGA 	Institutional/ Administrative	Formal	Paid

Source: JJM guidelines;¹⁸ Atal Bhujal Yojana guidelines;¹⁹ NREGA Works Manual²⁰

District Level

Table 3

Jobs and tasks at the District level

S No	Jobs	Tasks	Types of Job	Nature of Job	Remuneration
1	Junior Engineer	<ul style="list-style-type: none"> • Prepare specifications for material, construction, and maintenance projects • Supervise and oversee infrastructural projects • Offer technical support to Pump Operators and GP members, as needed 	Technical	Formal	Paid
2	Assistant Executive Engineer		Technical	Formal	Paid
3	Executive Engineer		Technical	Formal	Paid
4	District Programme Coordinator		Supporting	Formal	Paid
5	Coordinator for information, education, and communication (IEC)		Supporting	Formal	Paid
6	Coordinator for Capacity Building and Training		Supporting	Formal	Paid
7	Accountant		Supporting	Formal	Paid
8	Data Entry Operator		Supporting	Formal	Paid
9	Assistant Chemist		Technical	Formal	Paid
10	Monitoring and Evaluation (M&E)		Supporting	Formal	Paid
11	Hydrogeologist		Technical	Formal	Paid
12	Agriculture/Irrigation Expert		Technical	Formal	Paid
13	Hydrologist		Technical	Formal	Paid
14	Data Entry Operator		Supporting	Formal	Paid
15	Implementation Assistants		Supporting	Formal	Paid
16	Environment Expert		Supporting	Formal	Paid
17	Groundwater Expert		Technical	Formal	Paid

Source: ABhY guidelines, 2020; JJM guidelines, 2019.

State Level

Table 4
Jobs and tasks at the state level

S No	Jobs/Role	Type of Job	Nature of Job	Remuneration
1	District Programme Coordinator	Supporting	Formal	Paid
2	Coordinator for IEC	Supporting	Formal	Paid
3	Coordinator for Capacity Building and Training	Supporting	Formal	Paid
4	Accountant	Supporting	Formal	Paid
5	Data Entry Operator	Supporting	Formal	Paid
6	Assistant Chemist	Technical	Formal	Paid
7	M&E	Supporting	Formal	Paid
8	Remote Sensing Expert	Technical	Formal	Paid
9	Geographic Information System (GIS) Expert	Technical	Formal	Paid
10	Social Development Expert	Supporting	Formal	Paid
11	Groundwater Expert	Technical	Formal	Paid
12	Communication/IEC Expert	Supporting	Formal	Paid
13	Hydro-geochemist	Technical	Formal	Paid
14	Hydro-geophysicist	Technical	Formal	Paid
15	Procurement Expert	Supporting	Formal	Paid
16	Gender Expert	Supporting	Formal	Paid
17	Finance Management Expert	Supporting	Formal	Paid
18	Agriculture Economist	Supporting	Formal	Paid
19	M&E and Environmental Expert	Supporting	Formal	Paid
20	Water Resources Management Specialist	Technical + Supporting	Formal	Paid
21	Account Officer	Supporting	Formal	Paid
22	Data Entry Operator	Supporting	Formal	Paid

Source: ABhY guidelines, 2020; JJM guidelines, 2019.



A discussion with Village Water Sanitation Committee and Gram Panchayat members in Kawalgi, Karnataka.

Demand-side Mapping

There are various demand-side interventions that are bottom-up and need-informed and are undertaken by the community in order to manage water commons. These interventions can be supported by CSOs, NGOs or the government and usually emphasise behaviour change to promote judicious use and conservation of water. Within these, several jobs and roles exist that are included in Table 5. In

addition, there are traditional jobs – usually based on caste – that a community may have undertaken for generations which are included in Table 5 below. In the absence of well-recorded and published data, the table and box below are informed by the researchers' secondary research of participatory rural water management initiatives and through conversations with CSOs and NGOs.

Table 5

Demand-side jobs and roles across levels

Jobs	Location	Tasks	Types of Job	Nature of Job	Remuneration
Dhara Sevak	Purulia, West Bengal	<ul style="list-style-type: none"> Local spring volunteers 	Supporting + Technical	Informal	
Community Resource Persons	Gadakhadi, Maharashtra	<ul style="list-style-type: none"> Community mobilisation, liaising between community and the intervening agency, collecting hydrogeological data, and dissemination of information Trained in groundwater management, aquifers, and hydrogeological data collection 	Supporting + Technical	Informal	
Jal Surakshaks	Maharashtra	<ul style="list-style-type: none"> Monitor the groundwater situation at micro levels Trained for handling basic water-level measuring instruments, processes for identification of wells, and digitally sharing the information 	Technical	Formal	
Jal Sahelis	Bundelkhand, Uttar Pradesh	<ul style="list-style-type: none"> O&M work Build check dams and desilt ponds 	Technical	Informal	
Jalabandhus	West Bengal	<ul style="list-style-type: none"> Professional mechanics, trained by Water for People Attached to WUCs 	Technical	Informal	
Swacchagrahis	Pan-India	<ul style="list-style-type: none"> Promote community-level water conservation to ensure availability of water for use in toilets Demonstration and home visits to raise families' awareness about safe storage of drinking water Support villages in cleaning of water sources and public water bodies 	Supporting + Technical	Informal	Incentive-based
Neerkattis	Karnataka, Tamil Nadu, and Andhra Pradesh	<ul style="list-style-type: none"> Water manager – managing traditional tanks Recognised by the Karnataka government 	Technical	Traditional and Formal	
Kollalus and Thekedaars	Uttarakhand	<ul style="list-style-type: none"> Water managers overseeing irrigation through traditional water channels called guhls 	Technical	Traditional and Formal	
Jaldoots		<ul style="list-style-type: none"> Watershed planning, water quality assessment and management, soil quality assessment and community mobilisation, and outreach 	Supporting + Technical		

Box 1

Needs-informed jobs and roles in water management

In March 2022, researchers from JIN met with three civil society organisations namely PRASARI, Samerth Charitable Trust, and Arid Communications and Technologies (ACT). Based across India, all three organisations work in participatory integrated rural water management and security programs, and routinely engage with frontline workers. Unlike government schemes and missions, intervening organisations create water management roles and jobs that are directly informed by the needs of a particular village, block, or district. Examples of these roles include:

1. Water Entrepreneurs
2. Jal Sevaks
 - a. Create action plans and hydrogeological plans
 - b. Convene and conduct meetings in villages
 - c. Assist with execution work
3. Jaldots
 - a. One to two individuals per village
 - b. Promote community involvement in managing water commons
 - c. Lead and take ownership of water-related problems

Having worked in nurturing and sustaining water cadre in India's villages, officials from the three organisations also offered noteworthy suggestions:

- Frontline workers' tasks, especially in water and forest management, need to be reframed as an ecological service. Organisations are pushing for Payments for Ecological Service, which is a compensation offered to individuals or communities who undertake actions that increase the provision of ecosystem services such as water management, flood mitigation, and carbon sequestering (Kelsey et al., 2008).
- There is a stark difference in availability of funds for execution versus planning purposes. Most schemes, including MGNREGA and West Bengal's Usharmukti scheme, do not offer monetary support for planning. This gap is usually filled by CSOs who either operate independently or as an Implementation Support Agency, depending on the governmental guidelines, and support Gram Panchayats as well as frontline workers in making plans. If sustainable interventions need to be made, it is critical to train and support frontline workers during planning stages as well.
- It is possible for frontline workers to get absorbed into government positions, such as MGNREGA supervisors and Pump Operators, or to create entrepreneurial opportunities for them, such as water consultants and handymen, based on their experience and the training they receive. But this meaningful transition to livelihood is rare and only made possible through an intervening CSO or NGO.

Chapter 4: Reflections

It is evident that water- and sanitation-related work are in the spotlight, especially because of key central government programmes such as ABhY and JJM. These programmes, as illustrated in the report, are anchored by a frontline cadre at the village level and other water workers at the district and state levels. But while these roles exist in concept, the workers in these roles, their responsibilities, adequacy and skills, and the nature of their jobs can only be understood through additional investigation. JIN researchers, however, offer some preliminary findings and reflections that are as follows.

First, at this stage, it appears that there is little job continuity for the frontline cadre. Meaning that workers are unlikely to be engaged in the same work beyond the duration of a scheme, mission, or intervention. This can pose challenges in two ways: by taking away job security and resulting in duplicated efforts on the service provider's end.

Second, along with developing the workers' skills, which need continuous upgrade in the face of rapidly changing technology and increasing climatic change, there is also a need to engage the skilled cadre gainfully and provide them with local opportunities to earn a decent livelihood. At present, many of these skilled professionals undertake water-linked works on a voluntary basis. Therefore, while there are various programmes, technological innovations, and trainings that are being provided, there is also a need to develop a holistic view of the management of water, the jobs it generates, and the skills associated with it, such that it can guide supply- and demand-side interventions for achieving water security.

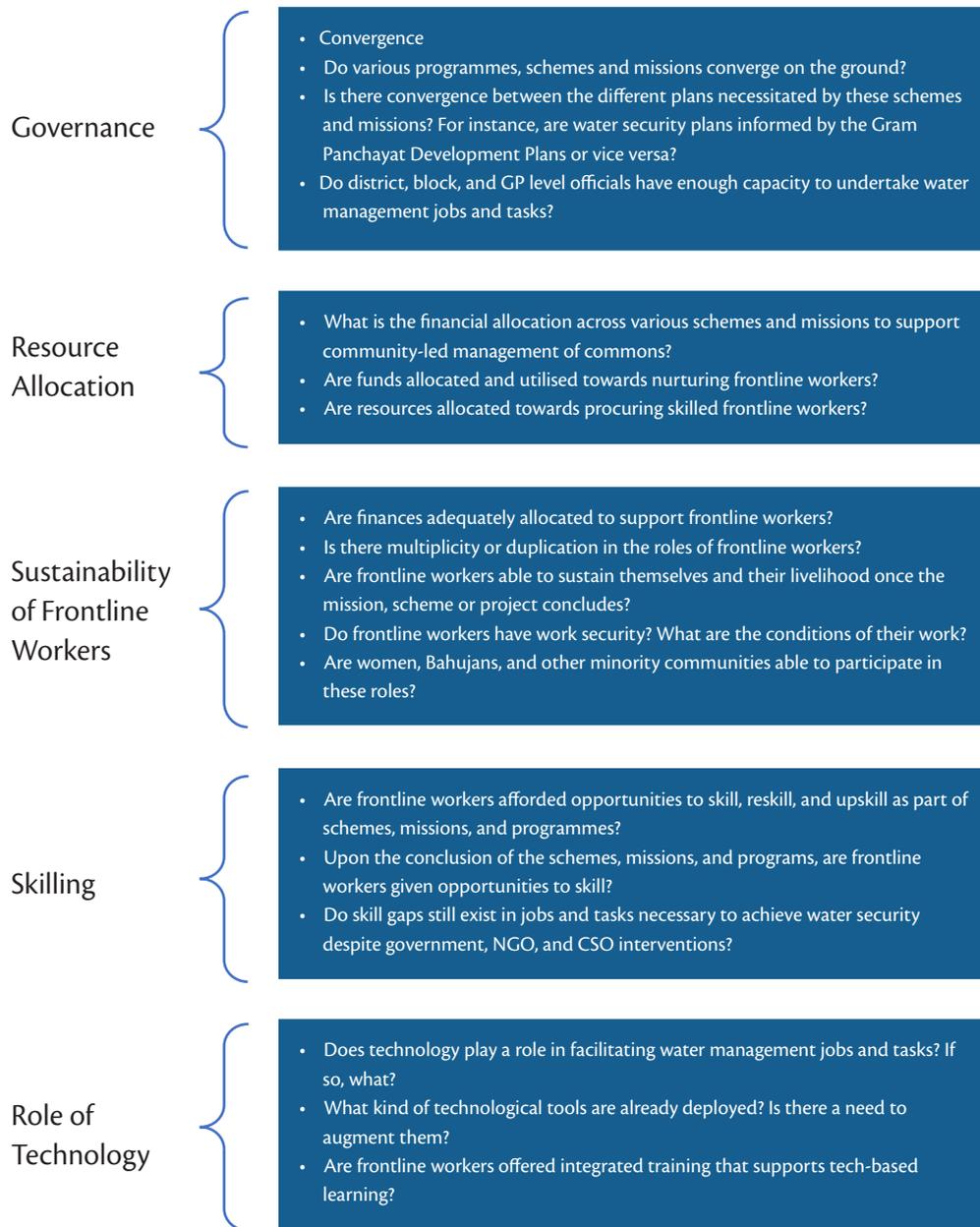
Finally, efficient governance mechanisms and resource allocation also impact workers involved in water management works.

These reflections, and the questions they pose, are also offered in greater detail in Figure 4 below.

In conclusion, the rural water management sector in India is gaining momentum and, in the process, creating jobs and generating tasks that need to be recorded, investigated, and analysed. Through this report, JIN researchers hope to make evident the scale of activity in the sector as well as to begin streamlining the ways in which jobs and tasks can be recorded and understood. As stated previously, the village, district, and state level maps offered here are based on early findings; as a result, they are not exhaustive. However, they propose a framework JIN researchers can build upon during primary research. The next reports in the series of outputs produced by the team will provide state-specific and district level profiles, and jobs and tasks maps informed by both secondary and primary research.

Figure 4

Reflections on frontline workers' roles and capacities in managing rural water commons



Notes

- ¹ World Bank, "India Groundwater: a Valuable but Diminishing Resource," March 6, 2012. <https://www.worldbank.org/en/news/feature/2012/03/06/india-groundwater-critical-diminishing>
- ² Government of India, "Community participation in water related programmes," Press Information Bureau, 2021. <https://pib.gov.in/PressReleaseframePage.aspx?PRID=1703211>
- ³ UN World Water Assessment Program (UN WWAP), *Water and Jobs*, United Nations Educational, Scientific and Cultural Organisation, 2016. <https://www.unesco.org/en/wwap/wwdr/2016>
- ⁴ Ministry of Jal Shakti, Government of India, *JJM Dashboard*, n.d. <https://ejalshakti.gov.in/jjmreport/JJMIndia.aspx>
- ⁵ O. Ahmad and J. Gupta, *India: Community management is a must for water management*, United Nations Office for Disaster Risk Reduction, 2019. <https://www.preventionweb.net/news/india-community-participation-must-water-management>
- ⁶ Centre for Monitoring Indian Economy (CMIE), *Unemployment Rate in India*, 2022. <https://unemploymentinindia.cmie.com>
- ⁷ E. Moore et al., *Sustainable Water Jobs*. Pacific Institute, 2013, https://pacinst.org/wp-content/uploads/2013/02/sust_jobs_full_report.pdf
- ⁸ ILO, *Report of the Conference, Seventeenth International Conference of Labour Statisticians*, International Labour Office, 2003. <https://www.ilo.org/public/english/standards/relm/gb/docs/gb289/pdf/cls-17.pdf>
- ⁹ Ibid.
- ¹⁰ ILO, *Report of the Conference, Nineteenth International Conference of Labour Statisticians*, International Labour Office, 2013. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_220535.pdf
- ¹¹ Ibid.
- ¹² UN World Water Assessment Program (UN WWAP), *Water and Jobs*, United Nations Educational, Scientific and Cultural Organisation, 2016. <https://www.unesco.org/en/wwap/wwdr/2016>
- ¹³ Australian Aid, *Understanding supply-side and demand-side to support water management in the Asia-Pacific*, The Australian Water Partnership, 2017. <https://waterpartnership.org.au/understanding-supply-side-and-demand-side-to-support-water-management-in-the-asia-pacific/>
- ¹⁴ Ibid.
- ¹⁵ Ministry of Water Resources, *Atal Bhujal Yojana: Framework and Approach for Capacity Building*, 2020. https://ataljal.mowr.gov.in/Ataljalimages/ABY_Framework_and_Approach_For_Capacity_Building_2020.pdf
- ¹⁶ Ministry of Jal Shakti, Government of India. *Operational Guidelines*, Jal Jeevan Mission, 2019. https://jaljeevanmission.gov.in/sites/default/files/guideline/JJM_Operational_Guidelines.pdf
- ¹⁷ Arunachal Times, "Skill development prog under JJM held," March 30, 2021. <https://arunachaltimes.in/index.php/2021/03/31/skill-development-prog-under-jjm-held/>
- ¹⁸ Ministry of Jal Shakti, Government of India. *Operational Guidelines*, Jal Jeevan Mission, 2019.
- ¹⁹ Ministry of Water Resources, *Atal Bhujal Yojana: Framework and Approach for Capacity Building*, 2020.
- ²⁰ Ministry of Rural Development and Panchayati Raj (MoRD), *Mahatma Gandhi National Rural Employment Guarantee Act Works Manual*, 2006. https://www.cse.iitb.ac.in/~karjat/waterdocs/watershed_manual_english.pdf

References

- Ahmad, O., and J. Gupta. *India: Community management is a must for water management*. United Nations Office for Disaster Risk Reduction, 2019. <https://www.preventionweb.net/news/india-community-participation-must-water-management>
- Arunachal Times. "Skill development prog under JJM held." March 30, 2021. <https://arunachaltimes.in/index.php/2021/03/31/skill-development-prog-under-jjm-held/>
- Australian Aid. *Understanding supply-side and demand-side to support water management in the Asia-Pacific*. The Australian Water Partnership, 2017. <https://waterpartnership.org.au/understanding-supply-side-and-demand-side-to-support-water-management-in-the-asia-pacific/>
- Centre for Monitoring Indian Economy (CMIE). *Unemployment Rate in India*. 2022. <https://unemploymentinindia.cmie.com>
- Government of India. "Community participation in water related programmes." *Press Information Bureau*, 2021. <https://pib.gov.in/PressReleaseFramePage.aspx?PRID=1703211>
- International Labour Organisation (ILO). *Resolution concerning statistics of work, employment and labour underutilisation*. 2013. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/normativeinstrument/wcms_230304.pdf
- ILO. *Report of the Conference, Nineteenth International Conference of Labour Statisticians*. International Labour Office, 2013. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_220535.pdf
- ILO. *Report of the Conference, Seventeenth International Conference of Labour Statisticians*. International Labour Office, 2003. <https://www.ilo.org/public/english/standards/relm/gb/docs/gb289/pdf/icls-17.pdf>
- Ministry of Jal Shakti, Government of India. *Operational Guidelines*. Jal Jeevan Mission, 2019. https://jaljeevanmission.gov.in/sites/default/files/guideline/JJM_Operational_Guidelines.pdf
- Ministry of Jal Shakti, Government of India. *JJM Dashboard*, n.d. <https://ejalshakti.gov.in/jjmreport/JJMIndia.aspx>
- Ministry of Water Resources. *Atal Bhujal Yojana: Framework and Approach for Capacity Building*. 2020. https://ataljal.mowr.gov.in/Ataljalimages/ABY_Framework_and_Approach_For_Capcity_Building_2020.pdf
- Kelsey, Jack, B., C. Kousky, and K. Sims. *Designing payments for ecosystem services: Lessons from previous experience with incentive-based mechanisms*. PNAS.org, 2008. <https://www.pnas.org/doi/10.1073/pnas.0705503104>
- Ministry of Rural Development and Panchayati Raj (MoRD). *Mahatma Gandhi National Rural Employment Guarantee Act Works Manual*. 2006. https://www.cse.iitb.ac.in/~karjat/waterdocs/watershed_manual_english.pdf
- Moore, E., H. Cooley, J. Christian-Smith, K. Donnelly, K. Ongoco, and D. Ford. *Sustainable Water Jobs*. Pacific Institute, 2013. https://pacinst.org/wp-content/uploads/2013/02/sust_jobs_full_report.pdf
- United Nations Department of Economic and Social Affairs (UN DESA). *International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4*, 2008. <https://digitallibrary.un.org/record/641645?ln=en>
- UN World Water Assessment Program (UN WWAP). *Water and Jobs*. United Nations Educational, Scientific and Cultural Organisation, 2016. <https://www.unesco.org/en/wwap/wwdr/2016>
- World Bank. "India Groundwater: a Valuable but Diminishing Resource." March 6, 2012. <https://www.worldbank.org/en/news/feature/2012/03/06/india-groundwater-critical-diminishing>

JustJobs

NETWORK

JustJobs Network is an applied research institute finding evidence-based solutions to pressing labour market challenges. We produce research on good job creation and workforce development, focusing our work on the critical knowledge gaps in the employment landscape.

JustJobs convenes a global network of diverse stakeholders — including policy shapers, academics, and grassroots leaders — to deepen the practical implications of our research endeavours and amplify their impact. Through the combination of cutting-edge research and global knowledge sharing, we aim to forge a fresh, dynamic channel for policy dialogue on employment at national, regional and international levels.